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feathers showing a band of dull white, succeeded by a broad black tip; breast slaty, becoming dull white on the throat; abdomen white, tinged with very pale rufous; a line of black passing from the top of the eye along the sides of the head to the neck; under surface of wings white, becoming dark brown at the tips; the shafts of the feathers on the breast and throat dark brown, forming numerous hair-like lines on the surface of the plumage; legs and feet greenish-yellow; upper mandible black; under mandible green at the base, shading into black at the tip; iris yellow.

Length, 14.50; wing, 8.50; tail, 3.75; tarsus, 3.75; bill, 1.50.

The sexes appear to be similar.

NOTES ON THE SUMMER BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS.

BY WILLIAM BREWSTER.

PROBABLY no other area of similar extent in Massachusetts has held out as inviting a field to the ornithologist as Berkshire County. Owing to its elevated, mountainous character it has been long suspected to harbor certain northern birds not known to summer elsewhere, at least regularly, within our limits, and speculations have been more or less freely indulged in by writers as to the species that breed there. But rather curiously no one—or at least no competent observer—seems to have cut the Gordian knot by investigating the region at the proper season, so that at this late date we actually have no definite information regarding it. With the hope of doing something towards filling this blank I visited the county last summer (1883) and explored the northern portion of it,—rather hurriedly it must be confessed, but still with sufficient thoroughness to acquire very much more than a superficial knowledge of its summer birds. My stay extended from June 21 to June 29, thus embracing a fair share of that brief period when the waves of migration are at rest, and birds of nearly every kind engaged in reproduction. Hence it is reasonable to assume that all the species found in numbers were established for the summer and breeding. This consideration is important inasmuch as I found but few nests.

Williamstown. The first three days were spent at Williamstown whence excursions were made for several miles in every direction. The surrounding country is hilly and well watered, but sparsely timbered, most of the land being under cultivation. In its general features it resembles portions of Worcester County, but the neighboring mountains are of course very much higher than any in Eastern Massachusetts; indeed, Mt. Graylock, which lies only four miles to the eastward of the town, is the highest point in the State, having an elevation of 3500 feet.

The woods are composed chiefly of beeches, rock maples, chestnuts, paper and yellow birches, white pines and hemlocks; with sycamores, Balm-of-Gilead poplars, red maples, elms, and hornbeams (*Carpinus americana*) along the streams. There are no firs and few spruces except on the mountains.

The bird fauna, to my surprise, proved to be not only strictly Alleghanian, but actually identical, save in the apparent absence of two or three species, with that of many parts of Middlesex County, in Eastern Massachusetts. Thus there were Bluebirds, House Wrens, Yellow Warblers, Warbling and Yellow-throated Vireos, Cedar Birds, Purple Martins, Cliff, Barn, and White-bellied Swallows, Purple Finches, Goldfinches, Song Sparrows, Baltimore Orioles, Crow Blackbirds, Kingbirds, Wood Pewees, Least Flycatchers, and Golden-winged Woodpeckers about the cultivated grounds and orchards; Chickadees, Black-and-White Creepers, Ovenbirds, Redstarts, Wood Pewees, and Red-eyed Vireos in the woodlands; Savanna Sparrows, Bobolinks, Meadow Larks (not common), and Red-winged Blackbirds on the meadows and broad, grassy intervalle farms; Wilson's Thrushes, Catbirds, Maryland Yellow-throats, and Chestnut-sided Warblers in the thickets along water courses; Grass Finches, Field Sparrows, and Indigo Birds on the rocky hillside pastures; and Robins, Crows, and Bridge Pewees nearly everywhere. Among the species apparently absent but to be expected * in such company, may be mentioned the Wood Thrush, Brown Thrasher, Nashville Warbler, White-eyed Vireo, and Swamp Sparrow. Several of these, as well as others which might be included in the same category, were observed only a few miles distant, but in lo-

* Several farmers told me that the Quail (*Ortyx virginiana*) formerly occurred in small numbers, but I obtained no positive proof of this.

calities of more or less different character from those above indicated.

Pownal, Vermont. The following notes were made June 23, during a drive to Pownal Pond, a small sheet of water about twelve miles to the northward of Williamstown in Pownal, the border township of Vermont. Although the locality does not come strictly within the scope of the present paper, it seems to me worth brief mention in this connection.

After passing the State line a marked change was apparent in the topography of the country. The surface became more broken and the hills higher, many of them in fact being low mountains. They were mostly cleared and cultivated, or in pasture, nearly to their summits, which were usually tufted with woods. Altogether, the land had a more fertile aspect, especially on the mountain sides.

The bird fauna did not differ strikingly from that of Williamstown, and showed no traces of any decided Canadian infusion. The species observed which had not been previously noted at Williamstown were the Hermit Thrush, abundant and in full song in an extensive larch swamp; the Nashville Warbler, one specimen; the Swamp Sparrow, one; Henslow's Sparrow, a pair feeding young in a meadow bordering a brook; the Yellow-winged Sparrow, a single male, singing on a fence stake by the roadside; the Olive-sided Flycatcher, a pair at work on a nearly finished nest built close to the stem of a young larch in the swamp just mentioned; and the Great-crested Flycatcher, of which at least half-a-dozen were seen and heard. The Nashville Warbler and the Yellow-winged Sparrow were not met with at all in Berkshire County, but the Swamp Sparrow was afterwards found sparingly along the course of a brook near the base of Mt. Graylock, the Hermit Thrush and Olive-sided Flycatcher proved to be abundant on the sides of that mountain, and several Henslow's Sparrows were observed in a meadow near the town of Adams.

The Hopper. On the afternoon of June 24, I left Williamstown and took up my quarters at a farm house at the head of a picturesque valley locally known, from its peculiar shape, as the "Hopper." This valley is a *cul de sac*, opening to the westward and walled in on the other three sides by Mt. Graylock and its neighboring summits, Prospect and Bald Mountains. Although lying at a considerable elevation above Williamstown, and shut

in by towering mountains, the main valley differed little in general appearance from the low country to the westward. Its fertile acres were similarly devoted to corn fields, mowing lands, orchards, and pastures, which offered nothing more interesting than Robins, Yellow Warblers, Field Sparrows, Grass Finches, Song Sparrows, Bobolinks, Orioles, Kingbirds, etc. Even the mountain sides, as far up as I explored them (to an elevation of about two or three hundred feet above the valley), seemed to harbor in their hard-wood forests, only such familiar woodland birds as the Ovenbird, Red-eyed Vireo, Scarlet Tanager, Rose-breasted Grosbeak, and Wood Pewee. This was disappointing, and I began to fear that I should find nothing of importance short of the summits of the mountains, when by chance I wandered into a ravine that extended back for a mile or more between two outlying spurs of Graylock.

Like most mountain glens this had a sparkling brook that brawled noisily over pebbly shallows, plunged impetuously down ragged ledges, swept silently between vertical rocky walls fringed with drooping ferns, and anon settled for a brief rest in pools where trout lurked in the shadows and water spiders dimpled the otherwise unruffled surface. The mountain sides rose steeply on either hand, in places narrowing the bed of the ravine to a width of only a few rods, in others retreating far enough to leave level stretches several hundred yards in extent. The ground everywhere was densely, often heavily, timbered with beeches, red and rock maples, paper and yellow birches, basswoods, etc., with a sprinkling of black spruces and an undergrowth, especially about the openings, of mountain maple (*Acer spicatum*), striped maples (*A. pennsylvanicum*), and hobble-bushes (*Viburnum lantana-oides*); while a few scant beds of ground hemlock (*Taxus baccata canadensis*) clung to the steeper slopes. Long after the morning sun had flooded the valley outside, this solitary glen lay in chill shadow, and even at noon tide it was invariably damp and cool, especially under the trees. These conditions, aside from those of elevation, flora, etc., doubtless attracted certain birds and repelled others; at all events the place held a rather curious mixture of bird-life.

The number of species was apparently small, for in the course of four visits I detected only eighteen: viz., the Robin, Wood Thrush, Wilson's Thrush, Black-capped Chickadee, Chest-

nut-sided Warbler, Black-throated Green Warbler, Mourning Warbler, Canada Flycatcher, Ovenbird, Redstart, Red-eyed Vireo, Scarlet Tanager, Black Snowbird, Rose-breasted Grosbeak, Pileated, Hairy, and Downy Woodpeckers, and the Ruffed Grouse. Of these the Wood Thrush, Wilson's Thrush, Ovenbird, and Red-eyed Vireo were abundant; the Robin, Chickadee, Black-throated Green Warbler, Canada Flycatcher, Scarlet Tanager, Grosbeak, and Grouse, common; the remainder more or less rare.

I saw only one specimen each of the Mourning Warbler and Snowbird. The former, a beautiful male, was shot near the brook about a quarter of a mile above the entrance to the ravine. It was singing among some bushes on the edge of an opening grown up to wild raspberry vines—just such a place in fact as the bird commonly chooses for a breeding ground in Northern New England, and I have little doubt that its mate was sitting on her eggs somewhere near, although I tramped the brush through and through without flushing her.

The Snowbird was also in this opening. Unlike the Warbler, he was silent and apparently ill at ease. Probably he had wandered down from the heights above for a brief visit only, perhaps to hear the Wood Thrush sing, more likely for a bath in the brook; at all events, he was gone when I returned an hour later.

Pileated Woodpeckers were seen and heard at various places in the ravine, but they are such rovers, and withal so noisy and conspicuous, that I may have met the same birds several times. On one occasion, while watching a Canada porcupine basking in the sun on the branch of a mountain maple, every now and then nibbling at its tender shoots in the leisurely way peculiar to his phlegmatic race, I heard the Flicker-like call of one of these Woodpeckers on the mountain-side above. Hastily concealing myself I imitated his tapping by striking the palms of my hollowed hands together, and almost immediately two of the superb birds appeared and alighted against the trunk of a beech directly overhead. As they chased one another upwards their scarlet crests flashed like fire among the leaves. Reaching a decayed branch they attacked it from opposite sides fairly bombarding me with pieces of bark and chunks of rotten wood. When at length they discovered me, they were off in an instant, each swinging down in a long graceful curve as he disappeared among the trees.

What with porcupines, Logcocks, Mourning Warblers, moose-wood (*Viburnum lantanoides*), and every now and then a mountain butterfly alighting for a moment in the path before me and slowly opening and closing its velvety wings. I found it difficult to believe that I was really in my native State, and not in some retired forest of northern Maine or New Hampshire.

The Hermit Thrush might perhaps be mentioned in this connection, for I occasionally caught the tones of his bell-like voice stealing down from some elevated point on the mountain side. But he did not properly belong among the dwellers of the glen, any more than did a Golden Eagle, which I saw one day circling high above it. These Eagles, by the way, are apparently far from rare here, for the museum at William's College* contains no less than four specimens which have been taken near Williamstown, and the farmers in the "Hopper" assured me that the bird breeds every season on Graylock.

Mt. Graylock. While in the "Hopper" I often looked longingly up at the dark spruce forest on the brow of Graylock, feeling sure that it must shelter many of the birds of which I was in search; but the western approaches to the summit of that mountain are so steep and difficult that I decided to finish the low country first and make the ascent from Adams, on the eastern side. The day chosen for this undertaking (June 28) proved exceptionally favorable; there had been rain over night, and through the forenoon great ragged clouds—the afterbirth of the storm—trailed their cooling shadows across the landscape, while occasional showers, followed by intervals of sunshine, completed the conditions for one of those rare days when birds sing almost uninterruptedly from daylight until dark. It was so still, too, that their songs could be heard at unusual distances.

I started early, on horseback, taking an assistant to look after the animals, as well as to assist at removing obstructions in the old and now nearly obliterated bridle path. For the first mile or two the way led through a succession of steep pastures more or less grown up to shrubby spruces, with occasional thickets of young beeches and, along the streams, some larger beeches, sugar maples, and birches (*Betula lutea* et *papyracea*). The charac-

* There are also two Williamstown Ravens in this collection, one taken in 1877, the other without a date; and a Bohemian Waxwing marked simply "Male, Williamstown, Mass."

teristic birds in this lower zone or belt were Robins, Hermit Thrushes, Black-and-Yellow Warblers, and Blue Jays, among the spruces; Wood Thrushes (not observed beyond the end of the first mile from the base), Wilson's Thrushes, Red-eyed Vireos, and Maryland Yellow-throats, with an occasional Redstart and Canada Flycatcher, along the streams; and Grass Finches and Snowbirds over the more open ground. In one place near the edge of a field of oats, I also found a single pair of Savanna Sparrows.

A little more than half-way up, these pastures ended and the path, after winding through a belt of heavy timber, tenanted only by Red-eyed Vireos and Black-throated Green Warblers, ascended a steep ridge and entered a level stretch sparsely covered with old, moss-grown birches. Here we found a few Snowbirds and a White-throated Sparrow, which proved to be the lower outpost, as it were, of the Canadian region which I was seeking.

Climbing another ridge that for the last mile or two had shut out all view of the summit, we paused on the threshold of a tract differing widely in character from anything that we had hitherto passed. It was a narrow plateau, extending in a semicircle around the eastern side of the mountain, between the ridge just mentioned and the final peak or summit, and for the most part comparatively level, although more or less broken by knolls and shallow ravines. This area, as well as the sides of the peak itself for some distance above the base, had been cleared of the original timber, but the ground was fast becoming covered with a vigorous second growth of maples (*Acer spicatum*) and birches (*Betula lutea* et *papyracea*), which in places had attained an average height of at least fifteen feet, while in others they failed to conceal the unsightly piles of cord-wood that marked the scene of the wood-choppers' labors during the preceding winter. At intervals a few scattered spruces of fair size and many tottering birch stubs had been left standing, and the thickets were cumbered with decaying logs and heaps of severed tree tops.

Before we had time to note these details, in fact at the very moment of drawing rein on the outskirts of this tract, I became aware that the goal of my hopes was reached. A shower had just passed and for a brief space, as the sun, peeping through a rent in the clouds, threw an intense light on the sea of wet,

glistening foliage, the air fairly rang with bird music. Sitting motionless in the saddle, straining my ears to catch the more distant sounds, as well as to disentangle the nearer ones, I quickly identified the measured chant of the Olive-backed Thrush, the liquid tinkling melody of the Winter Wren, the sweet, gushing trill of the Mourning Warbler, the wheezy song of the Black-throated Blue Warbler, the ringing whistle of the White-throated Sparrow, the low plaintive note of the Yellow-bellied Flycatcher, and the penetrating call of the Olive-sided Flycatcher.—at least three additions to the summer fauna of Massachusetts within less than as many minutes!

After the volume of sound had ebbed to its normal level we pursued our way, pausing often to listen, or dismounting to look for nests, or follow up some shy bird. The latter exertion, however, was scarcely needed, for most of the rarer species were present in such numbers that they were continually in sight or hearing. The Mourning Warblers and Winter Wrens were especially abundant, more so in fact than I have ever seen them elsewhere, and dozens of specimens might have been procured without leaving the path. The Olive-backed Thrushes, Black-throated Blue Warblers, and White-throated Sparrows were also common, but I found, or at least positively identified, only one pair of Yellow-bellied Flycatchers. To this list I shortly added the Yellow-bellied Woodpecker, several pairs of which were seen, one feeding young in a nest in one of the larger birch stubs; the Hairy Woodpecker, which proved to be rather common; and the Pileated Woodpecker, whose presence was attested by its unmistakable "peck-holes," although none of the birds were actually observed.*

The species just mentioned were of course not the only ones found here, although many of them were among the most abundant

* I also find the Black-backed Three-toed Woodpecker included in my notes on the following evidence, which, while certainly not strong enough to warrant a positive record, is worth mentioning: We were skirting a swampy tract of spruces spared, for some unaccountable reason, by the lumbermen, when I heard a Woodpecker "drumming" on a resonant limb. The next moment it called once or twice, but I could not get a sight at it, although I dismounted and searched the swamp in every direction. That it was a *Picoides* I have not the slightest doubt, but I am by no means certain as to whether it was *arcticus* or *americanus*, the notes of the two species being very similar. The chances of course favor the larger and commoner (as well as perhaps more southern) species, to which, indeed, I referred it without much hesitation at the time.

and conspicuous. But there was in addition a sprinkling of such ubiquitous birds as the Robin, Bluebird, Maryland Yellow-throat, Scarlet Tanager, and Catbird. I also came upon a pair of Towhee Buntings which, rather curiously, were the only individuals met with in Berkshire County. They were feeding young already on wing in a thicket where their nearest neighbors were Winter Wrens and Mourning Warblers.

At the point where the bridle path left this opening it plunged directly into a forest made up of spruces (*Abies nigra*) and balsams (*A. balsamifera*), with a mixture of yellow birches and a scant undergrowth of mountain ash, mountain maple, and hobble-bush. These woods continued without a break to the summit, a distance of nearly a mile as the path ran. They were very beautiful—the trees of fairly large size and evident antiquity, although more or less dwarfed and spreading. The ground beneath was firm, moderately open, and so free from rocks or holes that we often left the trail and rode at will between the trees. I had expected to find many birds here, but they proved far from numerous. I detected only two species not seen elsewhere, viz., the Red-bellied Nuthatch and Blackburnian Warbler. The former was not uncommon, but I saw only one Blackburnian—a beautiful male in full song among the branches of a spruce which overhung the path. I also discovered a neatly finished but empty nest of the Olive-backed Thrush. It was built in the top of a fallen fir, and so nicely concealed that I should have passed without noticing it had not the bird fluttered off, as I brushed the end of the branches. These Thrushes were more numerous here than in the opening below, and their music was often the only sound that broke the silence. I scrutinized them closely, hoping to find a stray *bicknelli* among them, but all that I saw or heard were unmistakably common Olive-backs.

The summit of Graylock was cleared years ago to afford a better view, but the surrounding woods have thrown out an advance guard of saplings which are fast recovering the lost ground. There is still a small open space, however, covered with wild grasses, among which I noticed buttercups but no sub-Alpine flowers. About this opening I found—in addition to the generally-distributed Olive-backs, Canada Flycatchers, and Snowbirds—a few Black-throated Green Warblers, a single Ovenbird (*Siurus auricapillus*), a Purple Finch, and a little party of Chimney

Swifts, which were careering about close over the bushes and turf, evidently reaping a rich harvest of insects. The most abundant species was the Snowbird, more numerous here than elsewhere on Graylock. This bird seems to have a particular fondness for bare mountain tops of whatever altitude.

We left the summit at about two o'clock and spent a long afternoon in the descent, repeating many of the episodes of the morning, finding nothing not already mentioned, and reaching the base barely in time to hear the Bobolinks bid good night to the sun. Looking back at the rosy haze fast deepening into purple shadows under the brow of the mountain, it was hard to realize that the day's experience had not been a delightful dream.

Recapitulation. Judging from what I saw of it, the low country (i.e., the valleys along the streams and the hills of moderate elevation) of northern Berkshire County has a nearly pure Alleghanian Fauna. Indeed I failed to find there a single bird which does not breed regularly within ten miles of Cambridge, although a few species common and universally distributed in the eastern portion of the State were apparently absent. Conspicuous among these were *Harporhynchus rufus*, *Dendræca pinus*, and *Pipilo erythrophthalmus*. Minor differences, due possibly to local causes, were the scarcity of *Helminthophila ruficapilla*, *Geothlypis trichas*, and *Melospiza palustris*, and the restriction of *Turdus mustelinus*, *Pyranga rubra*, and *Goniaephæa ludovicianæ* to the mountain sides or their intersecting water courses. But except for these slight differences the birds met with during a morning walk along the roads and through the woods and meadows about Williamstown or Adams* were identical with those which occur almost everywhere in Middlesex County.

At the base of the mountains or rather a little way up on their sides, and in such elevated glens as that at the head of the "Hopper," one would indeed find a few Canadian forms, such as *Dendræca maculosa*, *Geothlypis philadelphia*, and *Junco hiemalis*; but it was only a sprinkling, for the border line, at

* Mr. Allen tells me that he has seen Snowbirds in July on the outskirts of North Adams, but it must be remembered that they can descend from the neighboring mountains in a few minutes and doubtless they, with most of the other mountain birds, do actually visit the low country as soon as their young are able to fly, and long before the arrival of the northern migrants.

least on Graylock, was drawn sharply at an elevation of probably not less than 2500 feet. The only true Canadian birds which I found in any numbers below this line were *Dendræca maculosa*, *Geothlypis philadelphia*, and *Junco hiemalis*. Above it *Turdus swainsoni*, *Anorthura hiemalis*, *Dendræca cærulescens*, *Geothlypis philadelphia*, and *Zonotrichia albicollis* were abundant and unmistakably breeding, while *Sitta canadensis* and *Sphyrapicus varius* were moderately common, and *Dendræca blackburnæ* and *Empidonax flaviventris* at least sparingly represented.

In addition to these there were also the northern but not strictly Canadian forms *Myiodioctes canadensis* and *Contopus borealis*; the former ranging from the base to the summit, the latter confined to the area above the line just indicated. Rather curiously, *Turdus pallasi* and *Dendræca maculosa* were not found above this line although both extended well up to it.

Among the species just mentioned four, viz., *Turdus swainsoni*, *Dendræca maculosa*, *Geothlypis philadelphia*, and *Empidonax flaviventris*, have not, to my knowledge, been previously found summering in Massachusetts, and *Anorthura hiemalis* has been detected only once (Lynn; see Bull. N. O. C., Vol. VIII, pp. 119, 120). Of the others, *Turdus pallasi*, *Myiodioctes canadensis*, *Junco hiemalis*, and *Contopus borealis* have been long known to breed sparingly or locally; *Dendræca cærulescens* has been found nesting in Connecticut (Ibid., Vol. I, pp. 11-13), as well as occasionally observed during summer in the western part of Massachusetts; *Zonotrichia albicollis* has been found breeding (a single instance) at Framingham (Ibid., Vol. V, p. 52), and *Sitta canadensis*, *Dendræca blackburnæ*, and *Sphyrapicus varius* have been recorded on more or less good authority as occurring in summer in various parts of the State.

To return to the general subject. The nearly unmixed Alleghanian character of the region at large is so strongly marked that Graylock may be fitly characterized, in faunal language, as a Canadian island rising from an Alleghanian sea. Like the Catskills and some other outlying districts of the Canadian system, it is probably cut off from the mainland of such non-migratory Canadian forms as *Parus hudsonius*, *Perisoreus canadensis*, and *Canace canadensis*, but, on the other hand, it seems to

attract a large proportion of the migratory Canadian species. Some of the neighboring mountains, to continue the simile, doubtless also form Canadian islands, and there are probably many reefs—mountains of low elevation—where the area above high-water mark is sufficient to support only a few northern forms. It may be fairly questioned, however, if elevation here, as well as in other mountainous regions, is the sole factor governing the distribution of birds. That it is the chief one cannot be disputed, but certain birds are apparently influenced very strongly in their choice of breeding grounds by the presence or absence of certain trees or shrubs in which they are accustomed to build their nests. The flora of any given area is of course largely determined by altitude, but it may be materially affected, and even radically changed, by man's interference. For instance, in the region under discussion, spruces and firs are said never to reappear after the first cutting, the second-growth being invariably of hard woods; and, if tradition can be believed, several of the mountains near Graylock, which are now covered with beech, maple, birch, etc., originally had extensive tracts of "black growth," i.e., spruce and fir. Surely such changes must materially affect bird-life.

Graylock is in a state of transition. It still has large areas of spruces, but they are rapidly disappearing, and the character of the mountain is likely to undergo a great change within the next twenty-five years. It will be interesting to watch if the birds change also.

Of the fauna of the neighboring mountains I cannot speak positively, not having explored them to their summits; but I shall be surprised if they prove to harbor anything like the number of northern species which occur on Graylock.

DESCRIPTION OF THE FIRST PLUMAGE OF CLARKE'S CROW.

BY CHARLES F. BATCHELDER.

IN Colorado last spring, at a station known as McGee's, on the Denver and South Park R.R., in Chaffee County, I had the good